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(FILE 'HOME' ENTERED AT 07:20:22 ON 15 JAN 2002)

FILE 'CA' ENTERED AT 07:20:43 ON 15 JAN 2002

L1 514657 S (CHANG? OR VARY? OR INCREAS? OR DECREAS?) (4A) (CONCENTRAT? OR
COMPOSIT?)
L2 17782 S L1 AND DILUT?
L3 110 S L1 AND (CONTINU? OR AUTOMAT? OR SEMIAUTOMAT? OR INFINITES?) (4A) DILUT?
L4 155590 S L1 AND (TEMPERATURE OR DEGREE OR ISOTHERM?)
L5 21977 S L4 AND (PLOT? OR GRAPH? OR CONTOUR? OR MODEL? OR DIAGRAM?)
L6 747 S L5 AND (3D OR 2D OR (3 OR 2 OR THREE OR TWO) (1A) (D OR DIMENSION?))
L7 56 S L2 AND L6
L8 15168 S (CONTINU? OR AUTOMAT? OR SEMIAUTOMAT? OR INFINITES? OR CONSTANT?)
(7A) (CHANG? OR VARY? OR INCREAS? OR DECREAS?) (4A) (CONCENTRAT? OR
COMPOSIT? OR MIXTURE)
L9 6176 S L8 AND (TEMPERATURE OR DEGREE OR ISOTHERM?)
L10 105 S L9 AND (3D OR 2D OR (3 OR 2 OR THREE OR TWO) (1A) (D OR DIMENSION?))
L11 1128 S L9 AND (PLOT? OR GRAPH? OR CONTOUR? OR MODEL? OR DIAGRAM?)
L12 451 S L11 AND (PROPERTY OR VISCOS? OR TURBID?)
L13 216 S L12 AND (SOLUT? OR SOLVENT OR AQUEOUS)
L14 31 S L13 AND (ALGOR? OR EQUATION OR FIT?)
L15 185 S L13 NOT L14
L16 3 S L15 AND VARIABLE
L17 301 S L3, L7, L10, L14, L16
L18 262 S L17 NOT PY>1998
L19 20 S L18 AND (COMPUTER OR SIMULAT?)
L20 135 S L18 AND (3D OR 2D OR (3 OR 2 OR THREE OR TWO) (1A) (D OR DIMENSION?))
L21 118 S L18 NOT L19-20
L22 16 S L21 AND (ANOMALOUS OR COMPARATIVE OR (VARYING OR DIFFERENT OR EFFECT)
(1A) (TEMPERATURE OR COMPOSITION))
L23 160 S L19-20, L22

=> d 123 bib, ab 1-160

L23 ANSWER 21 OF 160 CA COPYRIGHT 2002 ACS

AN 124:330845 CA

TI Flow system based on a binary sampling process for automatic dilutions
prior to flame atomic spectrometry

AU Gine, Maria Fernanda; Packer, Ana Paula; Blanco, Telma; Reis, Boaventura
Freire dos

CS Centro de Energia Nuclear na Agricultura-Universidade de Sao Paulo, Caixa
Postal 96, 13400-970, Piracicaba, Brazil

SO Anal. Chim. Acta (1996), 323(1-3), 47-53

AB A microcomputer-controlled flow system to perform automatic dilns.
exploiting a binary sampling process is proposed. Introduction of precise
vols. of sample and solvent was achieved by solenoid valves. The
possibility to get different volumetric fractions was realized by software,
which defined the time delays of the valves and could be used, e.g., for
samples with analyte concns. exceeding the anal. range. A noteworthy
feature is that sample and stds. processing is not necessarily the same.
The anal. performance was exhaustively studied, in particular the precision
of std. measurements generated after application of different dilns., or
repeatability of results of 20 and 40 times dild. real sample solns. The
feasibility of the approach was demonstrated by the online automatic diln.
of plant digests for detg. Ca and K by flame at. absorption and emission
spectrometry. Precision of measurements performed on a soln. produced by
the automatic 10-fold diln. of a 100 mg/l soln. was characterized by a
relative std. deviation <1%. Accuracy was assessed by analyzing vegetal

ref. materials after dilg. 10 or 20 times. Results were in agreement at 95% significance level with the certified values. Comparison of automatic and manual dilns. by using a paired t-test on a set of samples with varying compn. presented no statistical difference at the 95% significance level.

L23 ANSWER 30 OF 160 CA COPYRIGHT 2002 ACS

AN 121:135268 CA

TI Static and Dynamic Light Scattering from Polystyrene/Poly(methyl methacrylate)/Bromobenzene: Temperature Effects

AU Seils, J.; Benmouna, M.; Patkowski, A.; Fischer, E. W.

CS Max-Planck-Institut fuer Polymerforschung, Mainz, 55128, Germany

SO Macromolecules (1994), 27(18), 5043-51

AB Static and dynamic light scattering measurements on polystyrene/poly(Me methacrylate)/bromobenzene solns. under the optical θ condition are reported. The θ condition is fulfilled by knowing that the av. increment of refractive index of the two polymers is zero and letting their compn. be 1/2. The total polymer concn. is kept const. and the temp. is changed from 30 °C to the crit. temp. T_c , which is found at 2 °C. The results reveal two distinct ranges of temps. where both static and dynamic properties show different behaviors. The upper range of temps. which is above 7°C in this mixt. can be described quite well with the mean field model based on the RPA. In particular the dynamic scattering function relaxes with a single exponential whose decay rate fits well to the theor. prediction using the above approxn. Below 7 °C, the results show strong effects of the crit. fluctuations which manifest themselves in the static properties by crit. exponents of the Ising type. The dynamic correlation function decays by following a bimodal distribution and the slow mode decays according to the crit. slowing down, as predicted by the mode coupling theory. The first cumulant of the dynamic scattering function is analyzed as a function of the temp., and good agreement is found with the theor. framework based on the mode coupling model and using the measured structure factor. From the intermediate q region where the first cumulant has a q^3 behavior, the viscosity of the mixt. is deduced and analyzed as a function of temp.

L23 ANSWER 35 OF 160 CA COPYRIGHT 2002 ACS

AN 119:15968 CA

TI Influence of linear velocity and multigradient programming in supercritical fluid chromatography

AU Kueppers, S.; Grosse-Ophoff, M.; Klesper, E.

CS Aachen Tech. Univ., Aachen, W-5100, Germany

SO J. Chromatogr. (1993), 629(2), 345-59

AB The linear velocity dependence of plate height and resohn. for a mobile phase composed of a mixt. of CO₂ and MeOH on a column packed with unbonded silica gel is presented. This dependence was measured at different pressures and compns., employing four condensed aroms. as a test analyte. Each chromatogram of the analyte was therefore measured at const. temp., velocity, pressure, and compn., by varying the last three phys. properties between chromatograms. The data are presented in the form of Van Demeter plots and as three-dimensional plots showing the dependence of resohn. and capacity factor on velocity and either pressure or compn. Based on these data, the change in the linear velocity suitable for pressure programs, mobile phase compn. programs and for increase in the relative mol. mass of the analyte is discussed. A pressure (d.) program needs a superimposed neg. linear velocity program for the purpose of decreasing the plate height and increasing the resohn., whereas such a program is not necessary to a comparable extent for compn. programming. If compds. with a wide range of relative mol. masses are sepd., the superimposing of a neg. linear velocity program onto a compn. program is also advantageous. For programming the

phys. properties of a mobile phase, i.e., pressure, d., compn., temp. and velocity, a no. of closely related equations are proposed and some corresponding program curves are shown. Hardware needs for programming are also briefly discussed.

L23 ANSWER 53 OF 160 CA COPYRIGHT 2002 ACS

AN 110:83182 CA

TI Raman and nuclear magnetic resonance studies on the concentration dependence of orientational relaxation times of the nitrate ion in dilute aqueous solution

AU Adachi, A.; Kiyoyama, H.; Nakahara, M.; Masuda, Y.; Yamatera, H.; Shimizu, A.; Taniguchi, Y.

CS Fac. Sci., Kyoto Univ., Kyoto, 606, Japan

SO J. Chem. Phys. (1989), 90(1), 392-9

AB The perpendicular orientational relaxation time (τ_{\perp}) of the nitrate ion was detd. as a function of concn. by the Raman line shape anal. (v1 stretch) in aq. LiNO₃ and KNO₃ solns. in the range of 0.2-1M and by NMR T1 measurement (14N) in MNO₃ (M = Li, Na, K, and Cs) solns. in the range 0.02-1M; the parallel orientational relaxation time (τ_{\parallel}) was also detd. by NMR measurement for the solns. enriched in ¹⁷O. Both τ_{\perp} and τ_{\parallel} increase linearly with increasing concn. up to 1M; the limiting values of τ_{\perp} and τ_{\parallel} were 1.25 and 1.9 ps, resp. The slope increases with the surface charge d. of the countercation except for Li⁺. These trends are predicted in very dil. solns. by the continuum theory. The anomalous behavior of Li⁺ was explained in terms of its strong hydration.

L23 ANSWER 57 OF 160 CA COPYRIGHT 2002 ACS

AN 107:146488 CA

TI Quantitation of metals in liquid samples by computer intelligent flow injection inductively coupled plasma emission spectrometry

AU Martin, John M.; Ihrig, Philip J.

CS Bowman Gray Tech. Cent., R. J. Reynolds Tob. Co., Winston-Salem, NC, 27102, USA

SO Appl. Spectrosc. (1987), 41(6), 986-93

AB With the advent of com. flow-injection equipment, the means became available for the automated computer-intelligent sample handling for inductively coupled plasma (ICP) anal. A system is described, which consists of a 36-channel ARL 34000 ICP spectrometer and a FIatron SHS-300 flow injection instrument. The functions that the system will perform include (1) automatic anal. of undiluted samples with sample introduction by flow injection, (2) automatic operator-selectable fixed diln. and anal. of samples, (3) automatic anal. of samples using computer-guided sequential dilns. to place all elements within the optimum calibration curve range, (4) the use of merging streams to achieve sample dilns. of ~200-fold, and (5) the automatic addn. of stds. to a sample and then sample anal. for a std. addn. study. By use of the automatic sample changer, up to 76 samples of widely varying concns. may be analyzed completely without operator intervention. Furthermore, all analyses will be made within the optimum calibration curve range for each element. Addnl. benefits of the flow-injection system include improved plasma stability, improved system precision and accuracy, and lower detection limits for many elements. The means by which these operations can be performed is described, and data are presented from the development and use of the system.

L23 ANSWER 63 OF 160 CA COPYRIGHT 2002 ACS

AN 100:153752 CA

TI Bactericidal activity of continuously decreasing cephalosporin concentrations

AU Shah, P. M.; Putz, H.; Ruhstrat, N.; Ritz, N.; Stille, W.
CS Zent. Inner. Med. Klinik., Johann Wolfgang Goethe-Univ., Frankfurt/Main,
D-6000/70, Fed. Rep. Ger.
SO Fortschr. Antimikrob. Antineoplastischen Chemother. (1982),
1(Cephalosporine 80er Jahre), 67-71
AB An app. simulating pharmacokinetics of antibiotic activity in serum was
constructed, in which the broth contg. the bacteria and antibiotic is
continuously dild. with sterile medium. The activities of 3rd generation
cephalosporins were studied in these conditions of const. diln.
Ceftazidime was active against Escherichia coli longer than were cefotaxime
and ceftizoxime. Cefotaxime maintained activity against Klebsiella
pneumoniae for the longest time. All 3 antibiotics were comparable against
Staphylococcus aureus.

L23 ANSWER 69 OF 160 CA COPYRIGHT 2002 ACS

AN 94:194592 CA

TI Methane solubility in aqueous sodium chloride solutions at elevated
temperatures and pressures

AU Blount, Charles W.; Price, Leigh C.; Wenger, Lloyd M.; Tarullo, Michael
CS Idaho State Univ., Pocatello, ID, USA

SO Proc. - U. S. Gulf Coast Geopressured-Geotherm. Energy Conf. (1980), Volume
Date 1979, 4(3), 1225-62

AB An empirical equation was derived from the CH₄ [74-82-8] soly. data using
regression anal. It can be used for interpolation of aq. CH₄ solubilities
(to $\pm 6\%$) for any given temp. at 212-464°F, 2,000-22,500 psi, and NaCl
concn. 0.3-25 wt.%. Increasing pressure and increasing temp. both result
in an increase in the soly. of CH₄ in water and in aq. NaCl solns.
Increasing the NaCl concn. at const. temp. and pressure markedly decreases
the soly. of CH₄. In log-log plots, CH₄ soly. increases linearly with
increasing pressure at const. temp. and const. NaCl concn.; it decreases
linearly with increasing NaCl concn. at const. temp. and pressure.

L23 ANSWER 74 OF 160 CA COPYRIGHT 2002 ACS

AN 92:141953 CA

TI Ultrasonic investigation of solute-solvent and solute-solute interactions
in aqueous solutions of bases, nucleosides, and nucleotides. 3.
Solute-solute interactions: studies of base stacking by ultrasonic velocity
measurements

AU Hemmes, Paul; Maevskii, A. A.; Bukin, V. A.; Sarvazyan, A. P.

CS Dep. Chem., Rutgers, State Univ., Newark, NJ, 07102, USA

SO J. Phys. Chem. (1980), 84(7), 699-703

AB The concn. dependence of ultrasonic velocity of dil. solns. of caffeine, 1-
methyl-4-(methylamino)pyrazolo[3,4-d]pyrimidine, adenosine, and deoxyadeno-
sine was detd. at a no. of temps. The relative velocity changes were non-
linear functions of concn. A method is proposed to use these data to
obtain stacking consts. and also to obtain information on hydration of the
species in soln. Stacking consts. were obtained which agreed with liter-
ature data. The data indicated that the intrinsic compressibility of the
mols. may be high. When this model is used, properties of the stacks can
be calcd. Hydration of both monomers and stacks can be calcd. Hydration
of both monomers and stacks was reflected in the temp. dependence of the
apparent compressibility. The stacks have a hydration shell which seems to
contain more structured water than the monomers. This is in qual.
agreement with the known neg. entropy change for stacking.

L23 ANSWER 96 OF 160 CA COPYRIGHT 2002 ACS

AN 78:120539 CA

TI Plotting phase diagrams for procollagen solutions

AU Andronikashvili, E. L.; Monaselidze, D. R.; Bakradze, N. G.; Mrevlishvili,
G. M.
CS Inst. Physiol., Tbilisi, USSR
SO Mol. Biol. (Moscow) (1972), 6(6), 915-25
AB A microcalorimetric method was used for obtaining equil. curves of helix-
coil transition for dild. solns. of acid-soluble procollagen from rat skin
in the alk. and acid pH regions. The specific melting heat for native type
fibrils was detd. in the pH range from 4.2 to 10.5 and was equal to 18
cal/g of the protein. The process of formation of native type fibrils was
not accompanied by any considerable thermal effect. When equil. conditions
of transitions were reached the heat and temp. of melting of fibrils
coincided with the enthalpy and temp. of progolaggen melting in dild.
solns. Intermolecular interactions gave a small energy contribution to the
process of formation of native type fibrils. An increase of the protein
concn. in native type fibrils as a result of a decrease of the vol.
fraction of the solvent led to an increase of the thermal stability of
fibrils. These studies make possible the plotting of a 2-dimensional
phase diagram on pH-temp. coordinates which describe the properties of
procollagen macromols. in all 3 forms (helical, coil, and native type
fibrils). A 3-dimensional phase diagram was plotted on the coordinates
concn.-temp.-percentage of ruptured bonds, both for the native and heat-
denatured protein.

=> log y

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